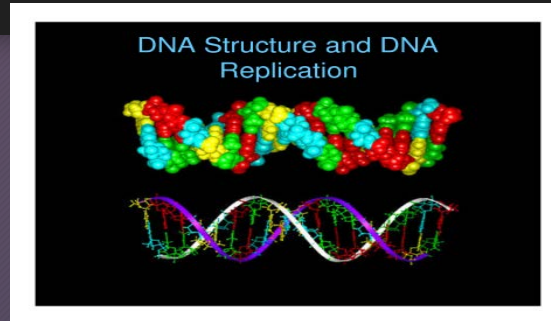


CURRENT TRENDS IN SUBSTANCE ABUSE

Michael Nerney and Associates
PO Box 93
Long Lake, NY 12847-0093
518-624-5351
michaelfnerney@gmail.com

Who is at risk?

- Genetics



- Environment



- Experiences



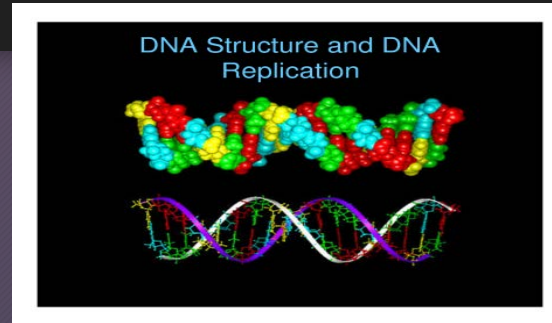
ACE Study

• Household dysfunction	Totals
• Caretaker abused	12.7
• Substance Abuse	26.9
• Mental Illness	19.4
• Divorce/Separation	23.3
• Incarceration	4.7



Who is at risk?

- Genetics



- Environment



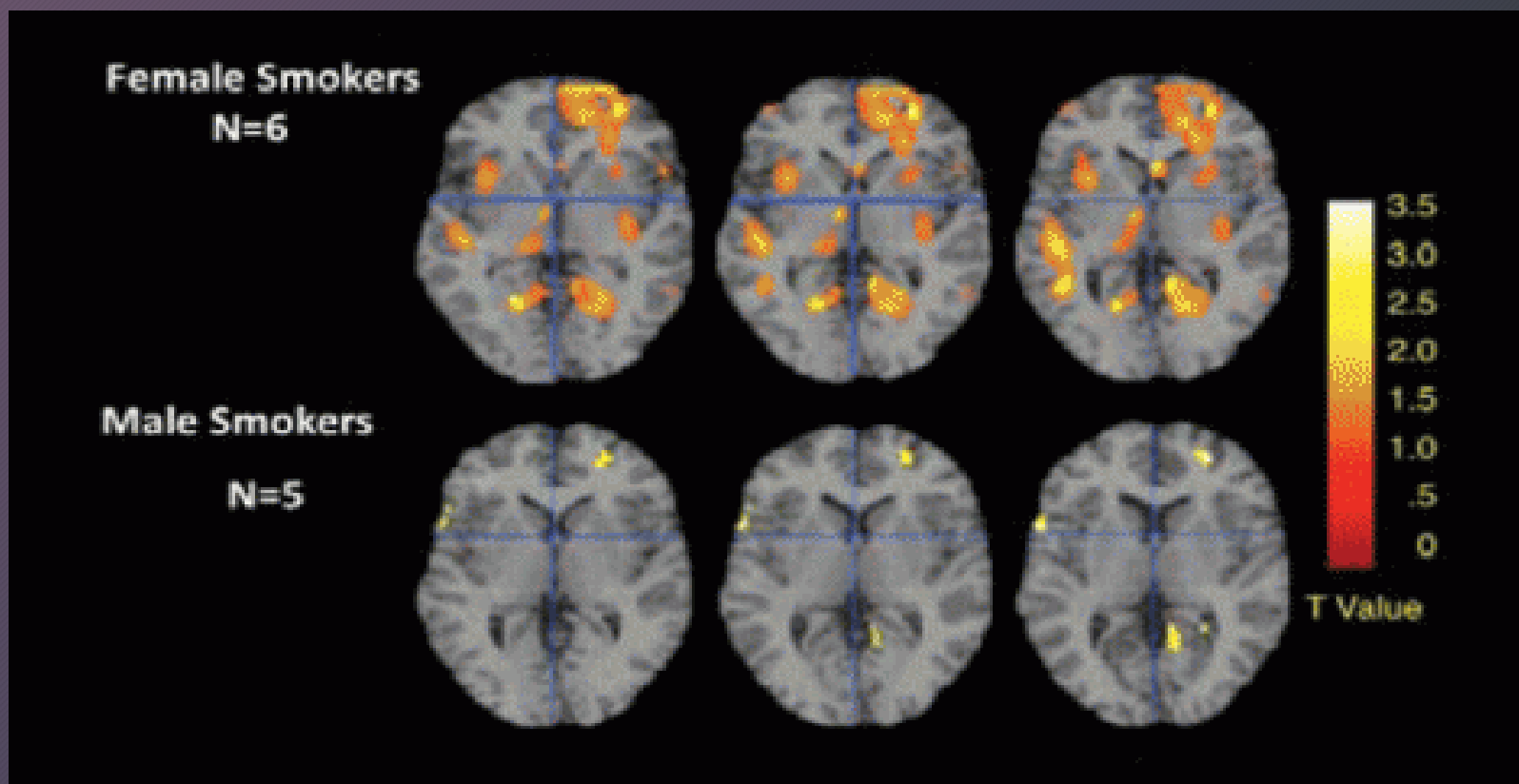
- Exposure



VAPE/JUUL Products



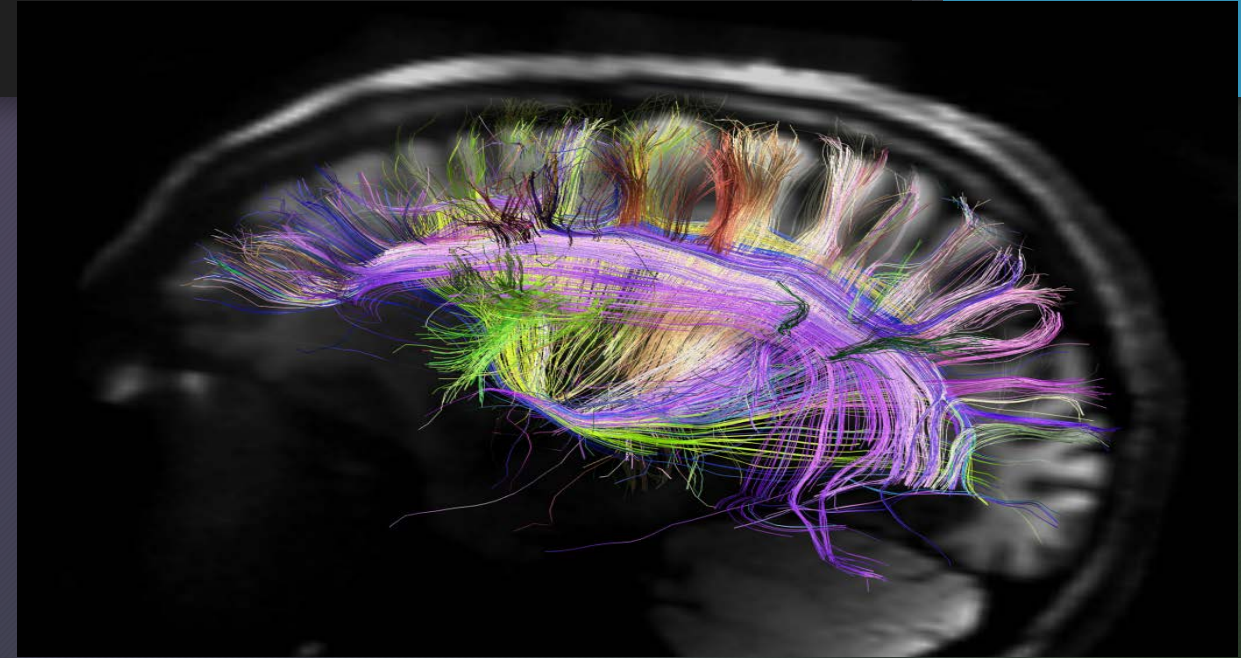
Gender Differences



The Adolescent Brain Factor

- Emotional Intensity

- Ages 10 – 24 years
- Amygdala
 - Hormones
 - Larger and more active
- 2 to 4 times

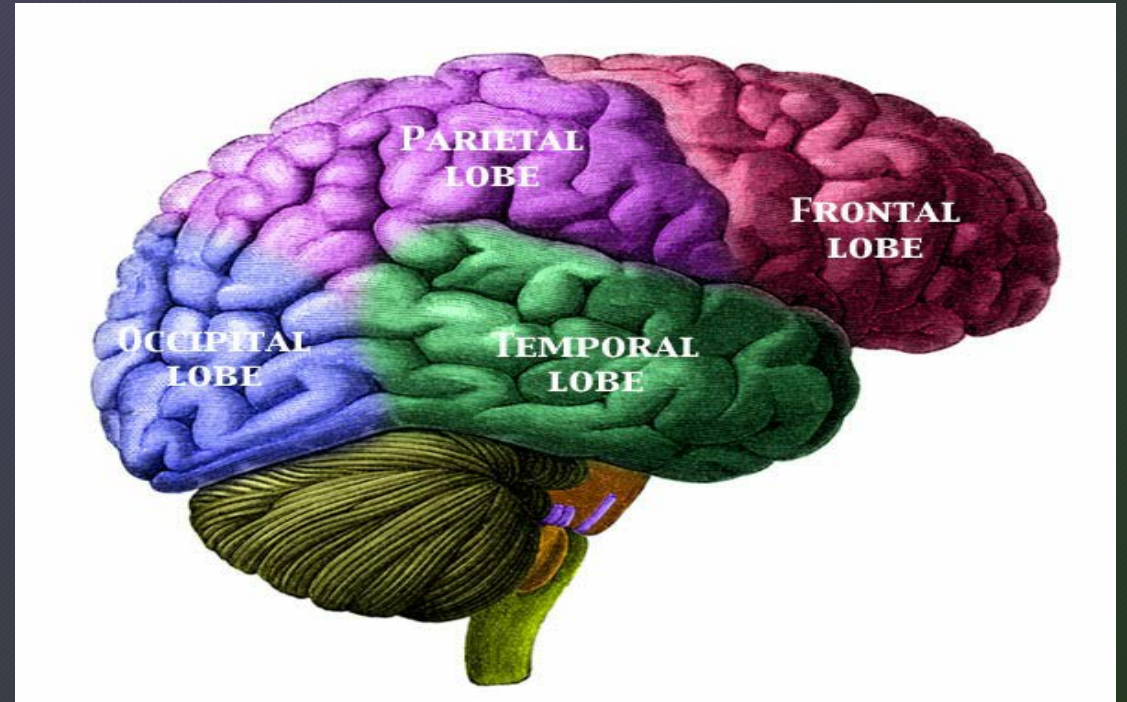


<https://images.nonexiste.net/popular/2012/03/30/diffusion-spectrum-imaging-reveals-an-orderly-weave-of-nerve-fibers-in-the-brain/>

The Adolescent Brain Factor

- Risk Taking and Peers (Who is addressing this?)

- Change at 12- 13 years old
- New sites appear in brain
- Emotional reward for risk taking
- Peer influence



Cultural and Environmental Influences

- Role Models



- TV



- Social Media

















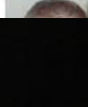

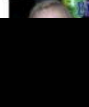










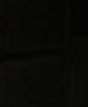
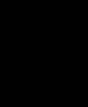
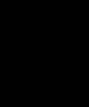








Risk Taking



THE CHOKING GAME

AND SOME OF THE LIVES IT'S TAKEN

 Josh Huntington - 18 1984, Idaho May 7, 1997 - Nov 14, 2007	 Leo McPhee - 16 Stam John, N.B., Canada Sept 21, 1989 - March 21, 2006	 Eric Matthew Greenup - 15 Aliso, Texas April 1, 1990 - Dec 11, 2005	 Sean Sanders - 16 Lake in the Hills, Illinois Sept 27, 1990 - Feb 15, 2003	 Utah Thomas Gilmard Martin - 12 Augusta, Michigan April 16, 1990 - Nov 14, 2008	 Erik Robinson - 12 Santa Monica, California Jan 27, 1998 - April 21, 2010	 Cody Ryan - 14 Lansing, Michigan Jul 1, 1997 - May 11, 2008	 Tyler Mison - 13 Spokane, United Kingdom Feb 5, 1996 - Sept 6, 2009	 Laurian Joy Branske - 13 Beverly, South Carolina Feb 23, 1997 - July 4, 2010	 Brianna Reid Caraceni - 12 Germantown, Colorado Oct 3, 1997 - June 19, 2010	 Skyler W. Smith - 12 Troy, Park, Idaho April 4, 1999 - May 30, 2011	 Braden Erickson - 13 Tulsa, Oklahoma Feb 19, 1992 - May 20, 2005	 Austin H. Rasmussen - 10 Tulsa, Oklahoma Feb 29, 2002 - March 11, 2012	 Kristian Tyler Marceno - 15 Camp, North Carolina Mar 20, 1993 - Nov 2, 2008
 Jacob - 15 Tulsa, Oklahoma Feb 15, 2010	 Cayden Scott Wimer - 12 Newark, Ohio Dec 12, 1994 - Jan 31, 2007	 Marka Lynn Redella Wier - 15 Ann Arbor, Michigan Dec 30, 1993 - July 15, 2009	 Alex Quinley - 13 Yonkers, New York Jan 26, 1991 - Nov 16, 2009	 Dallas Tr'Nost Duvall - 13 Farmington, New Mexico Jan 22, 1991 - Oct 26, 2008	 Jay Smith - 17 Tulsa, Oklahoma Sept 1, 1997 - Aug 5, 2009	 Justin Paul Butler - 16 Anaheim, California March 16, 1994 - Sept 26, 2011	 Harry Ayre - 16 England Feb 17, 1994 - April 8, 2010	 Nicolas Crochet - 14 Paris, France Nov 6, 1995 - Sept 20, 2000	 Dorian Richard - 11 Saint Laurent-de-Joux, France Oct 11, 1999 - Jan 26, 2011	 Nicholas Ryan Dressolly - 16 Palm Springs, California March 24, 1994 - Oct 17, 2010	 Thomas Exum Hyder - 12 Johnson City, Tennessee Aug 13, 1994 - March 10, 1977	 Kelly Cathie LaRocque - 18 Hillsboro, Oregon Nov 29, 1997 - Jan 7, 2006	
 Xavier John Darr - 13 California June 5, 1993 - May 21, 2006	 Jack Martin Doyle - 13 Warrenton, Oregon Nov 6, 1992 - Oct 25, 2006	 Alexa Beth Somers - 14 Macon, Georgia Oct 24, 1993 - Oct 5, 2008	 Billy Jay Crow - 11 Riverside, Ohio Dec 26, 1998 - Dec 21, 2010	 Brock Everett Hageman - 14 Bloomington, Illinois Dec 14, 1997 - April 4, 2012	 David C Wright - 13 Lawrenceville, Georgia April 18, 1997 - Oct 30, 2010	 Drew Paul Allen Fiske - 11 David City, Nebraska March 17, 1998 - March 12, 2010	 Florian Tini - 13 Göteborg, Sweden May 28, 2009	 Gage Andrew Wink - 12 Stoughton, Massachusetts Oct 25, 1999 - Sept 15, 2012	 Zachary Michael Hughes - 15 Harris City, Illinois Dec 17, 1991 - Aug 5, 2007	 Zebby Jon Bridges - 14 McGregor, Kentucky June 26, 1997 - Sept 1, 2011			

Stress in America-APA Survey

- 13-23
 - Highest stress First time ever

27% Extreme stress 8-10

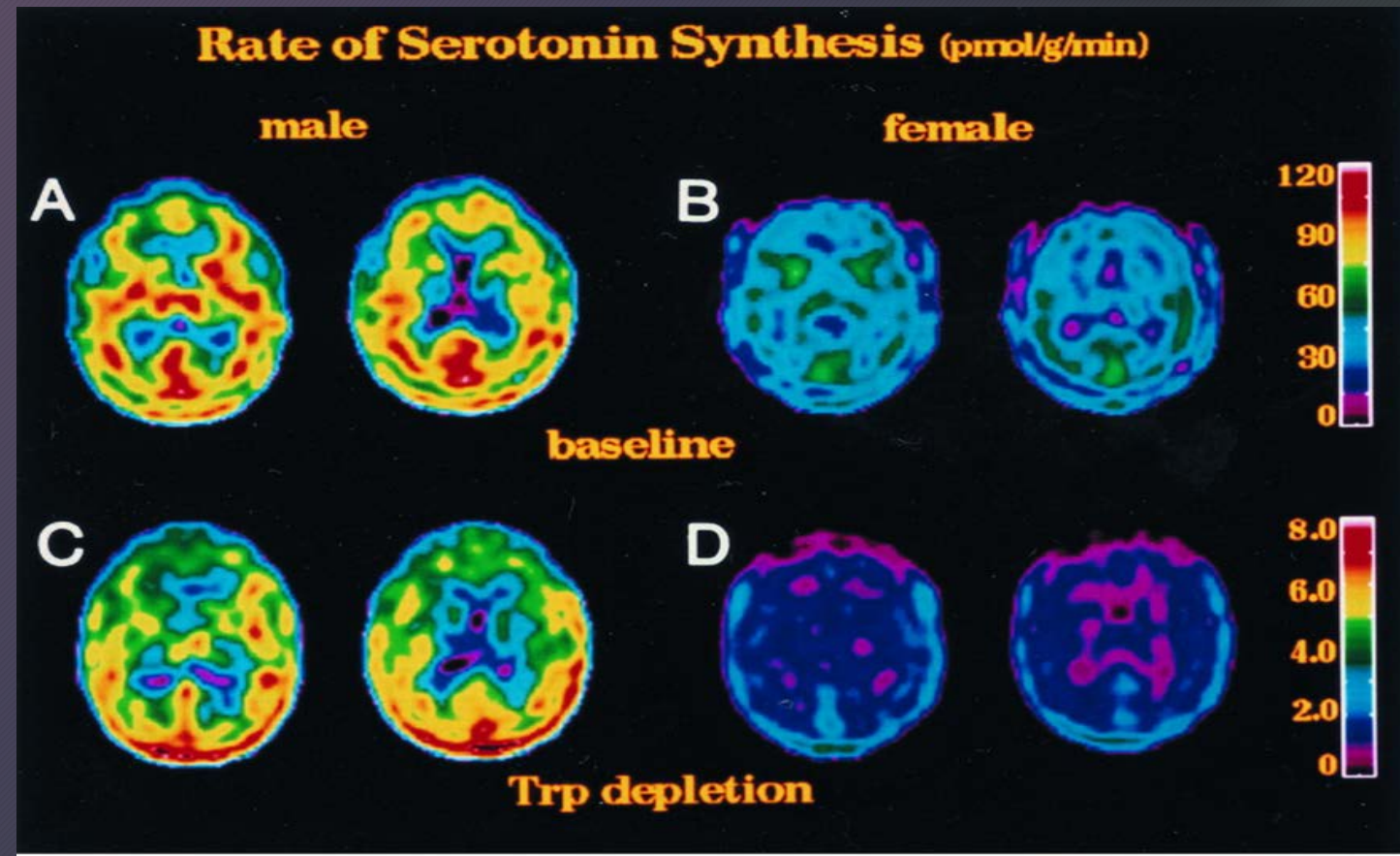
55% Moderate stress 5-7

(Stress reduction, Key need)



High Risk for Drug and Alcohol Abuse/Addiction

- Depression
- Serotonin Synthesis



Motivation for Drug Use

- Seek drugs for:
 - Create positive effect in brain chemistry
 - Dopamine release in reward sites
 - Suppress negative emotions
 - Activation in specific sites



Risky Business



Household Products

- Solvents
 - Brain Damage
 - Sudden Fatal Event



Medicine Cabinet

- Rx and OTC
 - Parents and Grandparents
 - Siblings



Alcohol: new products

- Alcohol treats



- Pocket Shots



Pocket Shot



SnöBar
frozen cocktails

14.6% Alcohol
100% Cool

GIMME SOME!
SNOBARCOCKTAILS.COM

21 and over only
enjoy responsibly

Impulse Control

- PRDM2
- Down regulated
- Disrupts impulse control
- Big factor in trying new drugs



Alcohol and drug combinations

- Robo-shots/Mucys

- Dextromethorphan
- Opioid cough suppressant
- Plus alcohol
- Rapid and powerful intoxication
- Motor control
- Impulse control
- Delusional



Alcohol and caffeine: Risk factors

- Physical
 - Energized
 - Uncoordinated
 - 30% drop in glucose uptake in motor cortex
 - 30% drop in glucose uptake in visual cortex
 - Slower reaction time



Alcohol and caffeine: Risk factors

- **Behavioral**
 - **Drunkorexia**
 - **Sense of competence**
 - **Aggressive social interactions**
 - **Twice as likely to suffer physical injury**
 - **Twice as likely to get in fights**
 - **Twice as likely to be either a victim or a perpetrator of sexual assault**

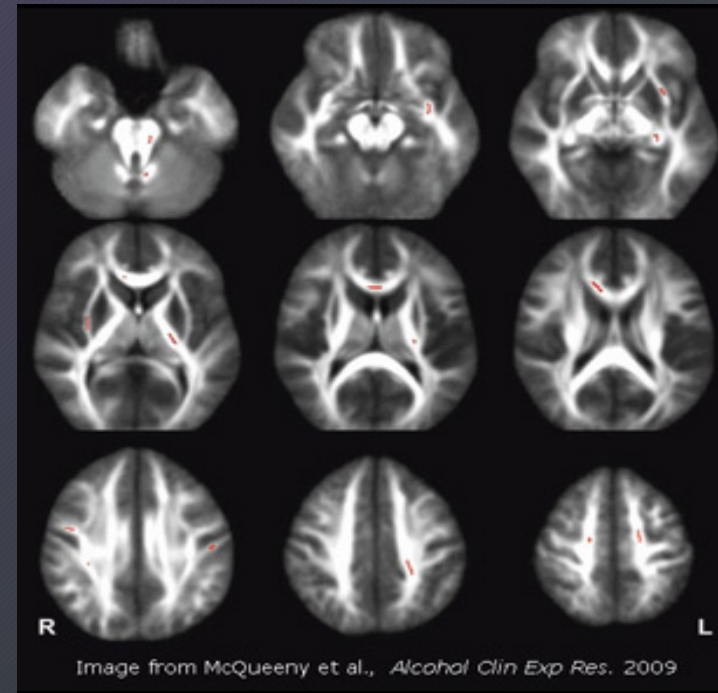
Alcohol and Marijuana

- Popular combination
- Cross fade
- Which one first
- Toxic effect



Alcohol: impact on brain

- NMDA pathways
 - 48 hours – calcium overrun
 - Cell death
- One year of binge drinking
 - 10% loss of PFC volume
 - Logic, reason, executive function



Alcohol: impact on brain

- One year of binge drinking
 - 10% loss of hippocampus volume
 - Memory
 - Motivation
 - Social behaviors
 - Learn how to study
 - Appropriate social interaction
 - Ask for help



Alcohol and Cancer

DRINKING
ALCOHOL
RAISES THE
RISK OF SOME
CANCERS

THE LESS ALCOHOL YOU DRINK,
THE LOWER THE RISK OF CANCER.



DRINKING ANY KIND OF
ALCOHOL CAN CONTRIBUTE
TO **CANCERS** OF THE:

- ▶ MOUTH AND THROAT
- ▶ LARYNX (VOICE BOX)
- ▶ ESOPHAGUS
- ▶ COLON AND RECTUM
- ▶ LIVER
- ▶ BREAST (IN WOMEN)

WWW.CDC.GOV/CANCER/DCPC/PREVENTION/OTHER.HTM



U.S. Department of
Health and Human Services
Centers for Disease
Control and Prevention

Cancers

- Co-carcinogenic
- As many as 7
- Female Specific



National Cancer Institute

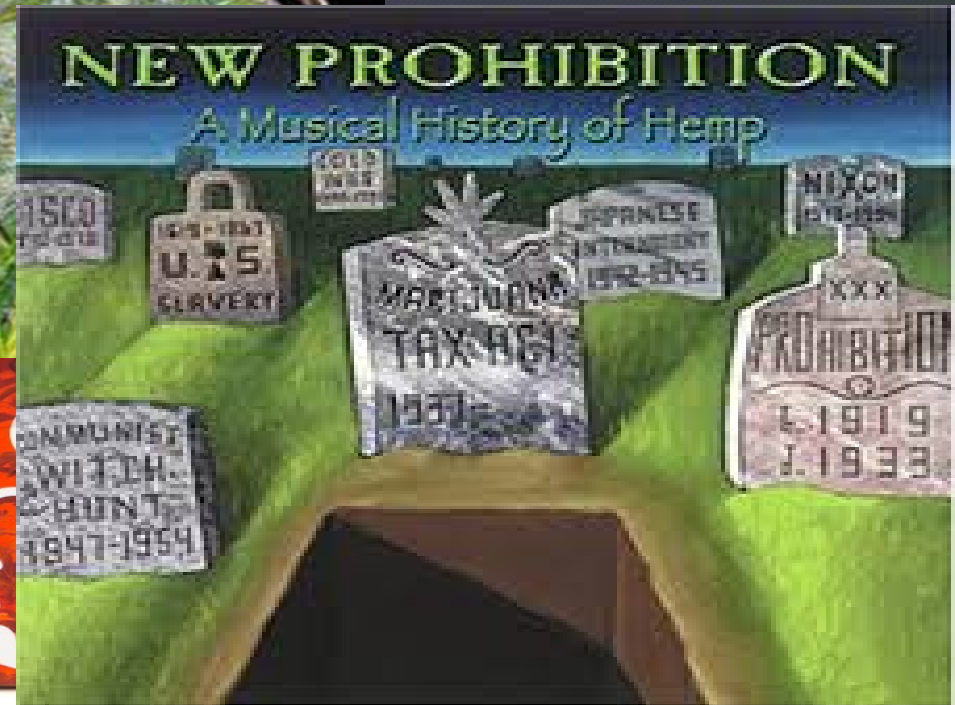
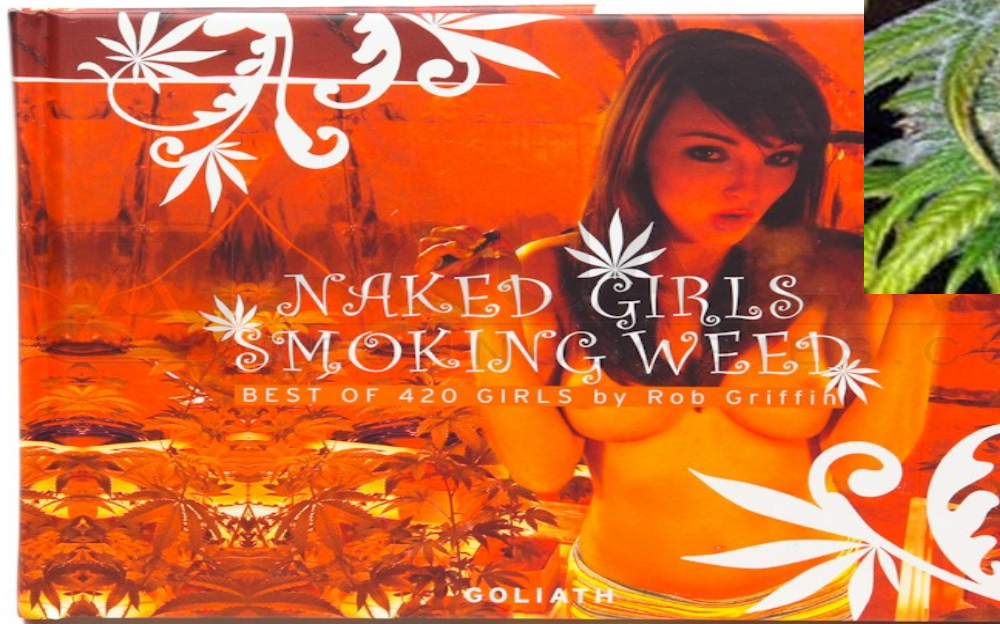
- Skin, Prostate, Pancreas, Breast, Liver,
- Colon, Larynx, Esophagus
- Dose Related
- Cause Unknown



Marijuana marketing: it's good for you



Marijuana marketing: sex, buds, and rock and roll



New Products: Dabbing

- Butane Hash Oil
- Amber, Shatter, Ear Wax



New products

- Cloud 9
- AB-PINACA
- AB-Funaca + Others
- Synthetic Cannabinoids
 - High Potency
 - Dabbing
 - E-pens
 - Beverages
- Extractions always increase risk for bad outcomes!
- Addiction, Overdose, Accidental Death



New products

- Marijuana edibles



Edibles Risk Factors

- Packaging
 - Resembles other treats
- Dose
 - Range of several hundred milligrams
- ROA
 - Slow start
- Access
 - Children find them

Marijuana, Marijuana Synthetics: Effects

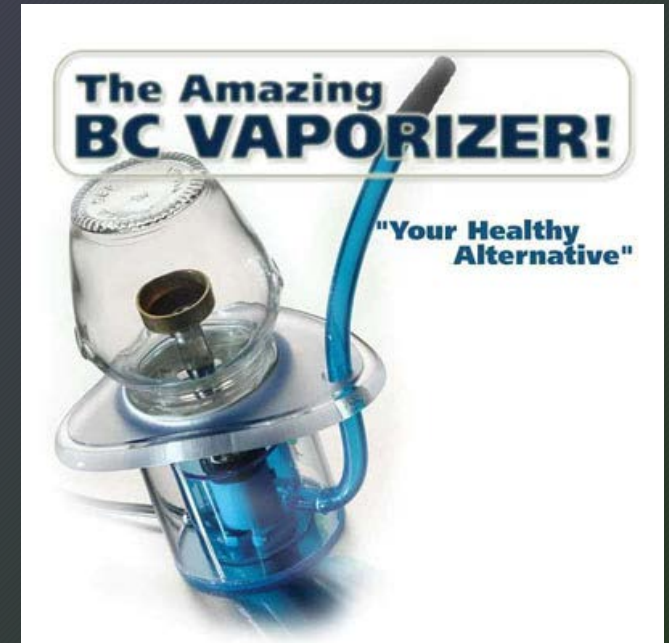
- Behavioral
 - Increased appetite
 - Divided attention difficulties
 - Cognitive deficiencies
 - In vulnerable individuals:
 - May lead to psychosis
 - May deepen depression

Marijuana: Significant risks

- Addiction
 - Anandamide influence
- High potency – more activity in CB1 and CB2 sites
- May lead to dependency and addiction
- Tolerance
- Withdrawal
- Compulsion
- Loss of Control
- Continued Use Despite Consequences
- Contamination Brodifacoum, an anticoagulant



Vaporizing



Liquid nicotine

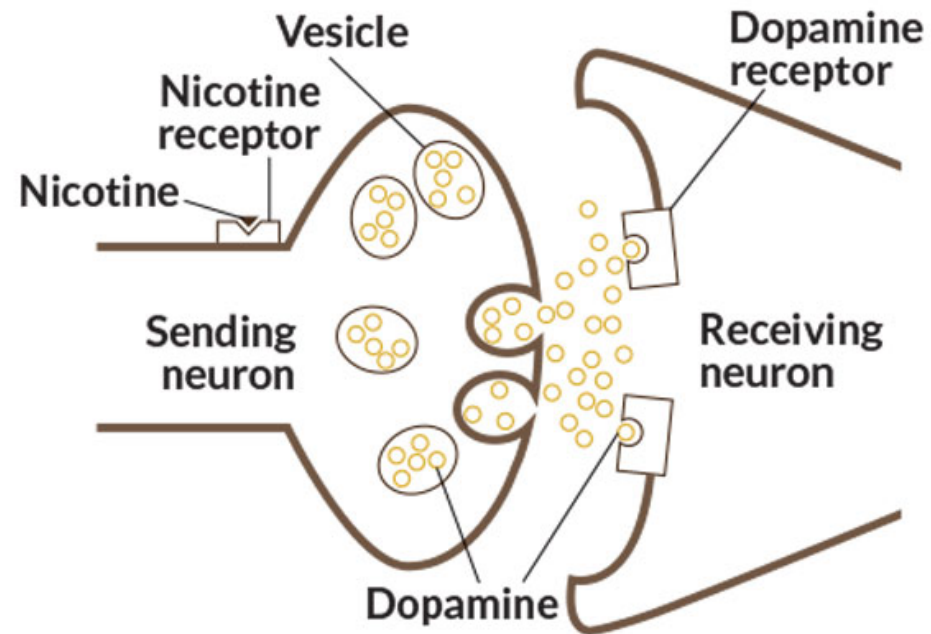


E-LIQUID NICOTINE STRENGTH GUIDE

Regular Cigarette	E-liquid Nicotine
Unfiltered, very strong	Super High - 36mg
Full Flavored, Strong	Extra High - 24mg
Regular (most)	High - 16mg
Light	Med - 11mg
Ultra-light	Low - 8mg
Freedom from Nicotine!	No Nicotine - 0mg



Nicotine and the Brain



Nicotine and the Brain

- Age of onset
- Addiction and Relapse
- Kindling
- Later Vulnerability



Heroin

- Pain Medication



- Street Drug



- Routes of Administration



On the Street

- Price
- As low as \$12



Acetyl fentanyl/carfentanyl

- Black Dahlia, Phantom
- PINK U-47700
- W-18 Gray Death



New Fentanyl Counterfeit Drugs

- Fentanyl and Cocaine
- Fentanyl sold as Rx
 - Norco
 - Percocet
 - Xanax

Route of Administration

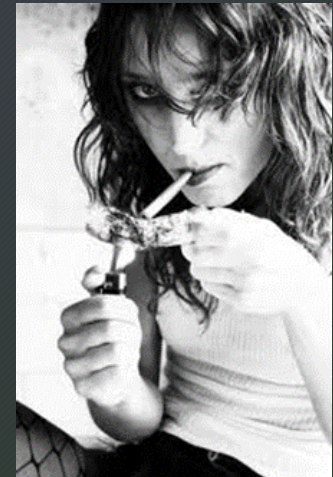
- Routes of Administration

- Snorting

- Smoking, new risk for brain injury

- Injecting

- IV, SC, IM



Route of Administration



Risk Factors

- Addiction



- Infection



- Overdose



On the Horizon

- Other Opioids

Zohydro Rx pain

Codeine Rx pain and cough

Imodium OTC

Gabapentin and Lyrica
nerve pathway

New Record for Overdose Fatalities

- Drug overdose deaths reach all time high 2016
 - All drugs 64,404, 72,000
 - Rx Opioids 14,400
 - Heroin 15,400
 - Fentanyl + 20,100



By the Numbers

Drug Overdose fatalities in the US

152 per day 64,000 per year Estimated to exceed 72,000 in 2019

Alcohol fatalities in the US.

241 per day 88,000 per year, 90,0000 in 2019

Concerns

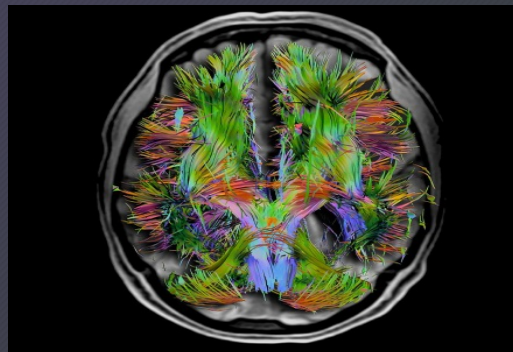
- New Research on the Brain

- Embedded Memory

- Too much DA
 - DeltaFosB

- Chemical Changes

- Protein shift
 - PKMzeta
 - Stores the high



Concerns

- BRAIN CHANGES:
- Reward System Shutdown
 - Too much DA
 - CREB
 - Gene code
 - Synthesize Dynorphin



Addictive Process

- Continued abuse in spite of consequence



Education

- Public/Private Schools

NY State Good Samaritan

- Parents

- Workplace

- Hospitals

- Drug seeking



She gets her hair from her mom.
Her eyes from her dad.
And her drugs from her grandma's
medicine cabinet.

BE AWARE. DON'T SHARE.
For more information, go to www.lockyourmeds.org.

For more information about the Lock Your Meds™ Campaign
or Informed Families/The Florida Family Partnership, please
call: (305) 856-4886, or visit us at www.informedfamilies.org.